

## **Collaborative Research on Urban Best Management Practices**

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Storm-driven wet weather flow (WWF), which includes combined sewer and sanitary sewer overflows and stormwater discharges, are a leading cause of water quality impairment. Problem constituents in WWF include pathogens, solids, nutrients, and toxicants. New technologies to control stormwater are needed as urban areas have limited space to implement controls. Improvement of controls remains a priority water focus area for the Office of Water.

The ORD's Urban Watershed Management Branch (UWMB) is collaborating with Region III to research WWF controls for the urban watershed. One project is a cooperative agreement with Penn State University that was developed through partnership with Region III and funded as a Regional Applied Research Effort (RARE) grant. The project involves a demonstration of the green roofs concept to control stormwater and reduce pollution. Green roofs slow runoff during large storms and are capable of absorbing a majority of, if not all, rainfall from smaller storms. The green roofs act as a biofilter, reducing the pollutant content of stormwater. High-quality performance data are required so that clear performance goals for stormwater control can be anticipated and achieved through a watershed approach and municipalities can move forward with green roof implementation.

A second collaborative project is between the UWMB researchers and the Region III stormwater Coordinator, who is temporarily working with the UWMB through the Regional Research Partnership (RRP) to develop a best management practices (BMP) effectiveness study in Region III. The study involves the monitoring of an actual BMP to evaluate its effectiveness in improving water quality in an impaired urban watershed. The study includes monitoring and outreach to Municipal Separate Storm Sewer System Operators (MS4s) and states about performance. Currently, three watersheds are being considered:

- Lower Beaver Dam Creek, Prince Georges County, MD
- Wissahickon Creek, Philadelphia County, PA
- Four Mile Run Arlington County, VA

Each watershed is within an MS4, has 303d list impaired waters for suspended solids and/or bacteria, has total maximum daily loads (TMDLs) developed, and has a high priority at the state and local level. The data will be synthesized and watershed selection criteria developed to choose one impaired watershed for the study. Programs such as RARE and RRP foster development of collaborations such as the examples described above.